

ANALISIS SEISMIK INVERSI *ACOUSTIC IMPEDANCE* (AI) DAN *MULTI-ATTRIBUTE* UNTUK MENCARI ZONA POROUS PADA LAPANGAN X

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ABSTRAK

Lapangan X adalah lapangan yang berada di Cekungan Kutai. Sebelumnya pada lapangan ini telah dilakukan akuisisi 3D seismik untuk eksplorasi migas yang terbentuk antara zaman *Pleistocene* hingga *Late Miocene*. Pada penelitian ini dilakukan analisis petrofisika untuk menentukan zona reservoir & menghitung porositas efektif. Berdasarkan analisa, zona target memiliki nilai porositas efektif antara 0.116 – 0.297 dec dan memiliki nilai *saturation water* antara 0.272 – 0.274. Dilakukan inversi AI *model based* untuk mencari sebaran litologi batupasir dengan menggunakan *cut-off AI* 22.000 ((ft/s)*(g/cc)) yang diperoleh melalui *crossplot*. Seismik multiatribut dilakukan untuk mencari sebaran porositas efektif dan *saturation water*. Dari hasil analisa berdasarkan litologi, porositas efektif dan *saturation water* didapatkan prospek zona 1 yang berada di utara sumur 1.

Kata kunci: Inversi impedansi akustik, analisis petrofisika, model based, multi-atribut, porositas, *saturation water*.

SEISMIC ANALYSIS OF ACOUSTIC IMPEDANCE (AI) AND MULTI-ATTRIBUTE INVERSION TO FIND POROUS ZONE IN FIELD X

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ABSTRACT

Field X is a field that is located in Kutai Basin. Previously, in this field, 3D seismic acquisitions were carried out for oil and gas exploration that was formed between Pleistocene to Late Miocene. In this study, petrophysical analysis was carried out to determine the reservoir zone and calculate effective porosity. Based on the analysis, target zone has an effective porosity value between 0.116 - 0.297 dec and has water saturation value between 0.272 - 0.274. AI inversion model was carried out to find the distribution of sandstone lithology using the AI cut-off 22.000 ((ft/s)*(g/cc)) for both wells. Multi-attribute seismic was carried out to find the distribution of effective porosity and water saturation. From the analysis based on lithology, effective porosity and water saturation , the prospect of zone 1 is found north of well 1.

Keywords : Aquistic impedance inversion, petrophysical analysis, model based, multi-attribute, porosity, water saturation.